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MEMORANDUM REGARDING U S NAVY RESPONSES TO U S EPA REGION III AND
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY COMMENTS ON THE DRAFT
FINAL CORRECTIVE MEASURES STUDY WORK PLAN NAS OCEANA VA
5/12/1994
NAVFAC ATLANTIC

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DATE: May 12, 1994

SUBJECT: Response to Comments on the Draft Final CMS Work Plan

The purpose of this memorandum is to respond to EPA and state comments on the CMS work plan and to highlight changes to the overall program to facilitate EPA's review of the final work plan. Other changes that the Navy and CH2M HILL felt were important to improve characterization also are discussed below.

EPA and State Comments

State Letter Dated January 19, 1994

1. *Site 1, West Woods Oil Pit - It is recommended that soil samples and ground water samples be taken in the north/northeasterly direction of samples 1-SB12 and 1-SB13 to delineate the lateral extent of contamination.*

Soil borings were added north and northeast of 1-SB12 and 1-SB13 in response to the state comments. The work plan shows one location but in response to current field observations, two or three more are anticipated.

On page 2-10, please clarify when referring to "floating free product" and "dense free product" as either LNAPLs or DNAPLs if this is what was intended by these references.

The terminology was changed to DNAPLs and LNAPLs.

The Water Division has requested that TPH also be included in your analysis plans.

TPH analysis was added to the thirteen borings at Site 1. No TPH was added to groundwater sampling at Site 1 because (1) TPH was sampled in five wells in 1990, (2) the TPH results correlated well with the PAH and aromatic VOC results such that very low TPH is expected in wells where there were low PAHs and

aromatics, and (3) PAHs and aromatic VOCs in the five wells proposed for resampling were all very low or undetected in 1993. On the basis of past results, analysis of TPH does not seem warranted. The sixth well will be placed at the northern fringe of the site, where groundwater contamination also is expected to be low.

2. *Site 2B, Line Shack 130-131 Disposal Area - There is a concern using the field data when it is compared with the laboratory data that there is a difference of an order of magnitude. Are the results for 2B-GP15 valid?*

The correlation between mobile and standard lab results during the RFI was very good overall. The result at 2B-GP15 was an anomaly that may have been due to unrecognized differences in sampling.

It is recommended that surface water and/or sediment samples be taken near the ditch or between the samples 2B-GP15 and 2B-GP20.

The ditch between 2B-GP15 and 2B-GP20 is shallow, does not receive groundwater, and contains water only during and after storm events. Unlike the main ditch, it is not interconnected with the groundwater system, therefore no sediment or surface water sampling is proposed because no releases to the drainage are expected.

3. *Site 2C, Line Shack 400 Disposal Area - It is recommended that soil samples be taken southwest of Building 400 since it was noted as a visible disposal area in 1971 air photographs.*

Two or three soil samples were taken southwest of Building 400. An extra sample was added during the investigation in response to field conditions. This extra sample (1-GS12) is shown in the final work plan.

EPA Letter Dated March 25, 1994

1. *No method detection limits are provided in the description of Method 8100 for PAHs, and this method is not widely used for these contaminants. Oceana should provide a list of estimated method detection limits to EPA for review to insure that they are sufficiently low to detect PAH concentrations that exceed health-based concentrations.*

Estimated method detection limits for water and soil are listed in Table 1 of this memorandum.

2. *Method 8240 for VOCs has detection limits for several VOCs in water (TCE and PCE for example) that are the same as the MCL for these contaminants in public drinking water. A sample with an elevated detection limit may preclude the use of that sample point to establish that no VOC contamination exists in groundwater*

and, depending on the situation, could result in a need to resample using a more sensitive method.

There are no cases among the groundwater analyses at the three CMS sites in which a dilution brought the VOC detection limit above the MCL and the constituent of concern was not detected at the elevated detection limit. This also is not likely to occur in future groundwater sampling for VOCs because most new sampling locations are not near the worst areas of contamination.

3. *The work plan notes that a 2 ppb detection limit will be achieved for vinyl chloride in certain sample situations. On p. 3-8, samples from three existing wells are to be analyzed using method 8240, with no notation of a different detection limit for vinyl chloride. Since it appears that vinyl chloride is a constituent of concern in this area, the lower detection limit should apply here also.*

The detection limit for vinyl chloride will be 2 ppb for all water samples analyzed for VOCs.

4. *Proposed sediment sampling for PAHs does not note which method will be used. The method should be specified with the same restrictions as noted above of method 8100 for PAHs.*

Table 3-1 indicated that method 8100 would be used for PAHs in sediment. Table 1 shows estimated detection limits.

EPA Letter Dated April 8, 1994

1. *Proposed risk-based cleanup goals must be derived using a residential exposure scenario for groundwater if the underlying aquifer could potentially be used for potable water (Class 1 or 2). For on-site soils, a residential exposure scenario and a groundwater protection scenario should also be used to derive a cleanup level. A cleanup level based on an industrial-use scenario can be presented but it must be in addition to the above cleanup goals, not instead of them.*

The workplan has been modified to include developing cleanup goals for a variety of exposure scenarios including the residential exposure scenario.

2. *Additional chemicals of concern that may be warranted for these three sites include benzene (site 1), trans-1,2-dichloroethene and benzene (site 2B), and trans-1,2-dichloroethene and 1,1-dichloroethene (site 2C). As noted in the revised workplan, the final chemicals of concern determination can be made following the receipt of the latest round of sample results. It is not clear on p. 3-16 whether constituents presently above health based concentrations will be considered for inclusion as chemicals of concern; however, site related chemicals that are presently above health based concentrations should always be considered for inclusion in COCs.*

Additional chemicals of concern for Sites 1, 2B, and 2C will be determined following the receipt of the latest round of sample results.

Constituents above health based concentrations will be considered for inclusion as chemicals of concern.

3. *Groundwater sampling for site 2C on p. 3-11 notes that aromatic volatiles will be analyzed by the mobile laboratory only if the CMS field investigation of the Phase II RFI sites 2D and 15. Because low levels of benzene were measured in a number of groundwater samples at this site, steps should be taken to insure future samples include analysis for this constituent.*

Comment noted for future groundwater sampling at Site 2C.

Additional Field Activities Proposed by the Navy

The following changes were adopted by the Navy to improve characterization. These changes are incorporated into the final work plan.

TCLP soil samples will be collected from the IDW soils placed in drums during drilling. This sampling will occur at the end of drilling. As part of the Site 1 soil boring program, three *in situ* TCLP samples of soils in the southern half of contaminated area at Site 1 have been added. TPH, and the four nutrient parameters total phosphorus, nitrite/nitrate, total ammonia, and total Kjeldahl nitrogen also were sampled from these three borings. The purpose of TCLP is to determine if the Site 1 soils should be considered hazardous by toxicity characteristics. The nutrient parameters will be sampled to aid in the choice of a remedial technology.

The sediment sampling program at Site 1 was expanded. Extra samples were added upstream of 1-SD6 (1-SD7) and between 1-SD1 and 1-SD4 (1-SB8). These samples will be analyzed for total organic carbon and PAHs. These samples were added to determine the concentration of PAHs at more points along the ditch to help identify the source.

Four surface water samples were added from the main ditch at Site 2B. Low concentrations of VOCs were detected in surface water samples 2B-SW2 and 2B-SW4 during the RFI. The four samples were added to confirm these results and determine VOC concentrations farther downstream.

The groundwater sampling program south of the main ditch also was expanded. Three *in situ* groundwater samples with onsite mobile lab analysis and another well (2C-MW19) were added. The purpose of this sampling is to improve characterizations of this area.

Other Changes to Field Activities

The following modifications and clarifications were adopted by the Navy to improve flexibility and interactive characterization during sampling. These changes are included in the final work plan.

The soil borings proposed at Site 2C was changed from rig-based to Geoprobe-based to take advantage of interactive mobile lab results. One soil sample was added in the field near Building 400 in response to field results. A program of soil sampling with onsite mobile lab analysis was added in the eastern source area at Site 2B. Twelve samples from eight borings were added. Samples were collected at two or three depths in three of the borings to attempt to define the vertical distribution of chlorinated VOCs. Two sample splits were sent to CH2M HILL's lab in Montgomery, Alabama from both Site 2B and Site 2C to confirm the mobile lab results.

The groundwater sampling section has been expanded and is now as detailed as the same section in the Phase II work plan. Either a Grunfos Redi-Flo 2[®] submersible pump or a positive displacement bladder pump will be used for groundwater sampling. This is consistent with the Phase II RFI work plan.

The location of 2C-MW14, the replacement well for 2C-MW3, was moved to the southwest side of Building 306 in response to groundwater and soil results from the Building 301 investigation in December 1993.

The current work plan does not call for groundwater from the three sites to be contained. The groundwater from 2C-MW14 will be contained because the well is immediately downgradient of known contamination. Groundwater from 2C-MW12 and 2C-MW13 will be contained because groundwater from these wells exceeded MCLs for vinyl chloride or TCE.

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Table 1
ESTIMATED DETECTION LIMITS OF METHOD 8100
POLYNUCLEAR AROMATIC HYDROCARBONS IN
WATER AND SOIL DURING THE CMS
(All values in ppb)

Constituents	($\mu\text{g/l}$)	($\mu\text{g/kg}$)
Naphthalene	2	60
2-Methylnaphthalene	2	60
1-Methylnaphthalene	2	60
Acenaphthylene	2	60
Acenaphthene	2	60
Fluorene	2	60
Phenanthrene	2	60
Anthracene	2	60
Fluoranthene	2	60
Pyrene	2	60
Benzo (a) anthracene	2	60
Chrysene	2	60
Benzo (b) fluoranthene	2	60
Benzo (k) fluoranthene	2	60
Benzo (a) pyrene	2	60
Indeno (1,2,3-cd) pyrene	2	60
Dibenzo (a,h) anthracene	2	60
Benzo (g,h,i) perylene	2	60
Note that detection limits for soil are a function of moisture content and all detection limits are increased by dilutions.		